Opticent | HEALTH

HaloC375™

Revolutionize small animal anterior segment imaging with visible-light optical coherence tomography.

***For research use only. Not intended for diagnostic procedures**

The Opticent HaloC375 research system is a free-standing visible-light optical coherence tomography (vis-OCT) imaging platform for imaging the anterior segment of the eyes in small animals (e.g., mice and rats).

The optical design provides for the addition of multiple modules for specific applications, higher-resolution lens assembly for microscopic imaging, or a standard lens assembly for a balance between field of view, imaging depth, and lateral resolution.

HaloC375 can be configured to be operated on a stationary or programmable mobile platform based on a small-footprint robotic arm, providing flexibility to meet different research needs.

Configurable imaging optics allow researchers to prioritize field of view, working distance, or spatial resolution, while optional high-speed acquisition and programmable robotic positioning expand its capabilities for specialized imaging workflows.



Figure 2: Full system rendering of HaloC375, with stationary sample arm mount and sample head magnified.

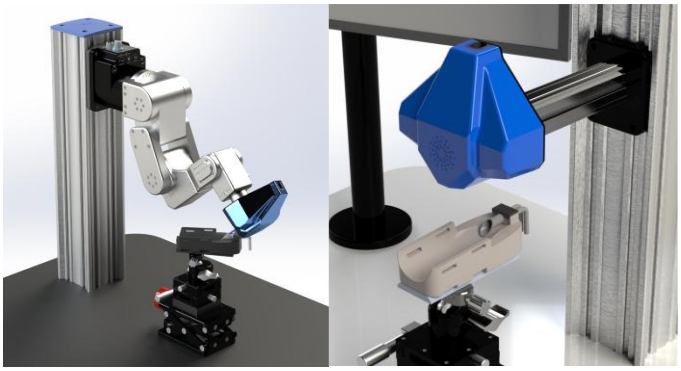


Figure 3: Comparison of HaloC375 system configurations with robotic arm (top) and stationary (bottom) support.

With axial resolution down to 1.1 µm in glass, lateral resolution as fine as 2.7 µm, and imaging depths up to 1.5 mm in air, the system enables detailed visualization of both biological structures and material features. These capabilities support the examination of fine anatomical details, including corneal microstructure, tear film morphology, and ocular outflow pathways.

The combination of high spatial resolution and depth-resolved imaging allows researchers to assess internal features and structural variations that may be difficult to distinguish using conventional surface imaging techniques.

Common System Use Cases

Ultra-high-resolution anatomical imaging in live animals, tissue samples, and nonbiological samples

Anterior segment imaging

Corneal and tear film imaging

Outflow pathway imaging, including collector channels and Schlemm's canal

Limbal OCT angiography (OCT-A)

Free-form imaging with a robotic arm

Metrology, material damages

Glass cracking and laser modification

HaloC375 Specifications		
	Standard-resolution model (optimized for *in vivo* imaging)	**High-resolution model (optimized for tissue & nonbiological sample imaging)**
Axial resolution	1.3 µm in tissue	1.3 µm in tissue, 1.1 µm in glass
Lateral resolution (FWHM)	7.1 µm	2.7 µm
Depth of imaging	1.5 mm in air	1.5 mm in air
Working distance	23 mm	10 mm
Field of view	7.2 mm	2.2 mm
Depth of focus	405 µm	60 µm
Maximum A-line rate	80 kHz (125 kHz or 250 kHz for an additional cost)	80 kHz (125 kHz or 250 kHz for an additional cost)
Spectral range	510 nm - 610 nm	510 nm - 610 nm
Angiogram mode	2-5 repeats	2-5 repeats
Speckle reduction mode	Up to 10 volume repeats	Up to 10 volume repeats
Mobile cart dimensions	110 cm height; 65 cm width; 65 cm depth	110 cm height; 65 cm width; 65 cm depth

For further inquiries, sales information, or technical questions, please contact Opticent at info@opticenthealth.com.

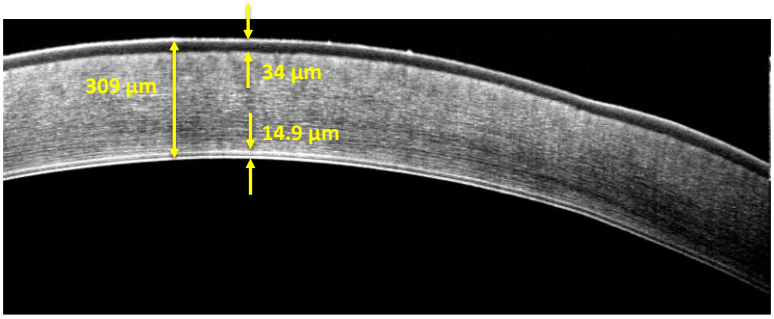
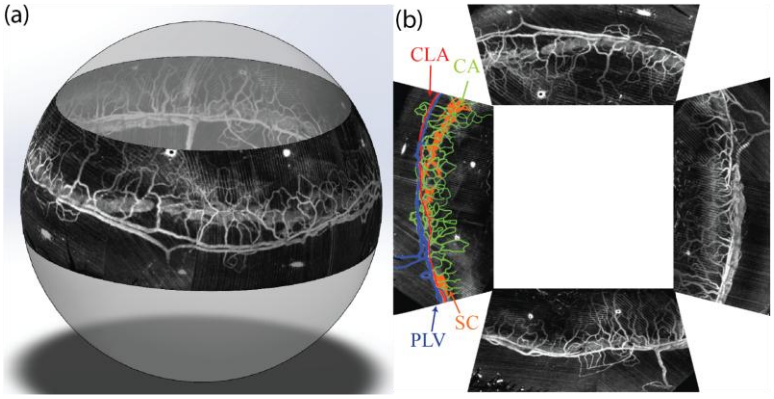


Figure 4: Rabbit cornea imaging



PLV: perilimbal vein; CLA: circular limbal artery
CA: corneal arcades; SC: Schlemm's canal

Figure 5: (a) Outflow pathway and (b) limbal vascular angiogram in mice *in vivo. Ref: Investigative Ophthalmology & Visual Science 61, 23 (2020)*

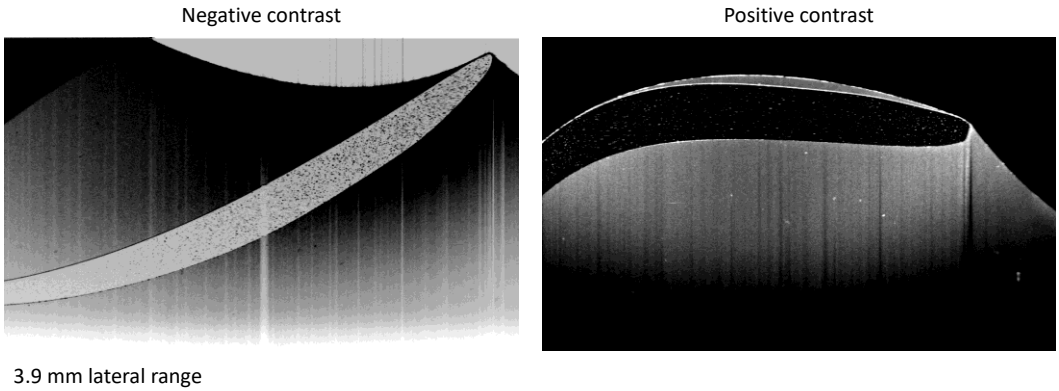


Figure 6: Imaging contact lens with negative (left) and positive (right) contrasts.

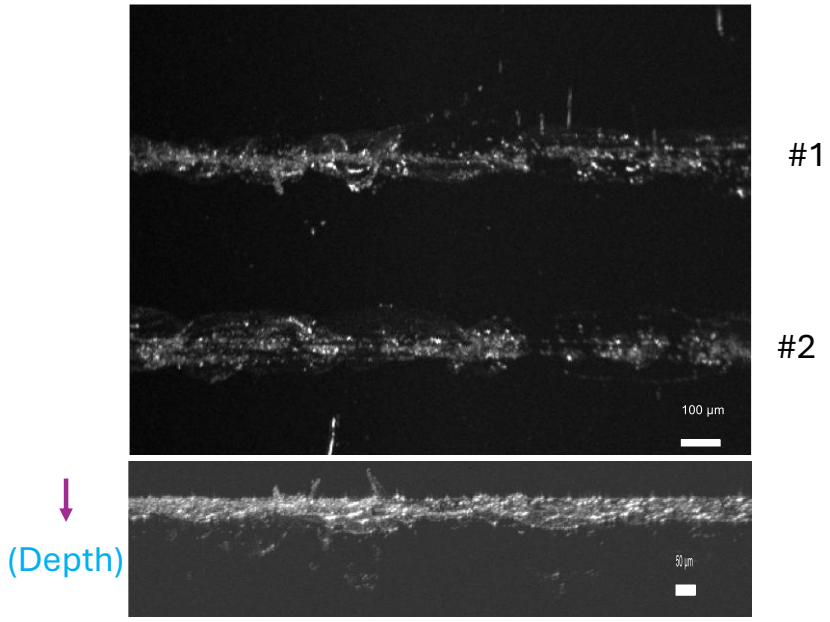


Figure 7: (a) Projection view of two long glass scratches; (b) Depth profile of the glass cracking along scratch #1.